Digital Elevation Model of Wisconsin

Metadata also available as

Metadata:

Identification_Information:
Citation:
Citation_Information:
Originator: United States Geological Survey (USGS)
Publication_Date: 1998
Title: Digital Elevation Model of Wisconsin
Geospatial_Data_Presentation_Form: raster digital data
Publication_Information:
Publication_Place: Madison, Wisconsin
Publisher: Wisconsin Department of Natural Resources (DNR)
Other_Citation_Details:
Refer to the USGS DEM Fact Sheet for details: <http://erg.usgs.gov/isb/pubs/factsheets/fs04000.html>
Online_Linkage: <http://www.dnr.state.wi.us/maps/gis/geolibrary.html>
Online_Linkage:
<ftp://gomapout.dnr.state.wi.us/geodata/elevation/DEM_30-meter.zip>
Online_Linkage: <http://maps.dnr.state.wi.us/webview/>
Description:
Abstract:
This Grid-format Digital Elevation Model (DEM) is a raster representation of land elevation of Wisconsin. This DEM ("demgw930") is derived from the 7.5-minute DEMs published by the US Geological Survey (USGS). This DEM is an integer grid, with elevation units in meters relative to the National Geodetic Vertical

Datum of 1929 (NGVD 29). The 7.5-minute DEMs have a 30-meter pixel cell size, or resolution. More current or detailed DEMs may also be available directly from the USGS. For more information, refer to the USGS DEM Fact Sheet: <http://mac.usgs.gov/mac/isb/pubs/factsheets/fs04000.html>

Purpose:

These data provide a highly generalized, statewide representation of land surface elevation for mapping purposes. The data are not intended for landscape scale analysis.

Supplemental_Information:

The spatial extent this data layer is the state of Wisconsin, plus a buffer around the perimeter extending approximately 5,000 meters beyond the state boundary. The DEM includes elevation values every 30 meters or 98.4 feet. Elevation units are in meters. ArcView with the Spatial Analyst Extension, ArcInfo/ArcGIS Grid, or comparable GIS software is needed to use the Grid format data meaningfully.

Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 1990

Ending_Date: 2000

Currentness_Reference: publication date

Status:

Progress: Complete

Maintenance_and_Update_Frequency: None planned

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -93.032613

East_Bounding_Coordinate: -86.597506

North_Bounding_Coordinate: 47.128224

South_Bounding_Coordinate: 42.410356

Keywords:

Theme:

Theme_Keyword_Thesaurus: none

Theme_Keyword: elevation

Theme_Keyword: hypsography

Theme_Keyword: DEM

Theme_Keyword: digital

Theme_Keyword: model

Theme_Keyword: environment

Place:

Place_Keyword_Thesaurus: none

Place_Keyword: Wisconsin

Access_Constraints: None

Use_Constraints: None

Point_of_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Wisconsin DNR
Contact_Position: GIS Data Specialist
Contact_Address:
Address_Type: mailing address
Address: P.O. Box 7921
City: Madison
State_or_Province: WI
Postal_Code: 53707-7921
Country: USA
Contact_Voice_Telephone: (608) 264-8916
Contact_Facsimile_Telephone: (608) 266-0870
Contact_Electronic_Mail_Address: John.Laedlein@dnr.state.wi.us
Hours_of_Service: Normal business hours or as available
Native_Data_Set_Environment:
Microsoft Windows 2000 Version 5.1 (Build 2600) Service Pack 1; ESRI ArcCatalog 8.3.0.800

Data_Quality_Information:
Logical_Consistency_Report:
The data exists within a consistent data structure consistent with ArcInfo GRID requirements.
Completeness_Report:
The DEM is visually inspected for completeness for the purpose of performing a final quality control and identifying any edits which may be needed.
Positional_Accuracy:
Horizontal_Positional_Accuracy:
Horizontal_Positional_Accuracy_Report:
The DNR has not performed an independent evaluation of the accuracy of the data.

Digital elevation models meet horizontal National Map Accuracy Standards (NMAS) accuracy requirements. Additional information on DEM specifications can be found in the USGS National Mapping Program's Standards for Digital Elevation Model (DEMs): <http://mapping.usgs.gov/standards>, and in the USGS publication titled 'Digital Elevation Models - Data Users Guide 5.': <ftp://mapping.usgs.gov/pub/ti/DEM/demguide>.
Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

The DNR has not performed an independent evaluation of the accuracy of the data.

As stated in the USGS DEM Data User's Guide, 'The method of determining 7.5-minute DEM accuracy involves computation of the root-mean-square error (RMSE) for linearly interpolated elevations in the DEM and corresponding "true" elevations from the published maps. Test points are well distributed, are representative of the terrain, and have "true" elevations well within the DEM accuracy criteria.'

DEMGW930 is a 'composite' 30-meter DEM including Level 2 coverage where it exists and Level 1 elsewhere.

According to the USGS DEM Data User's Guide, "Level 1 DEM's are elevation data sets in a standardized format. The intent is to reserve this level for 7.5-minute DEM's or equivalent that are derived from scanning National High-Altitude Photography Program, National Aerial Photography Program, or equivalent photography. A vertical RMSE of 7 m is the desired accuracy standard. A RMSE of 15 m is the maximum permitted."

"Level 2 DEMs are elevation data sets that have been processed or smoothed for consistency and edited to remove identifiable systematic errors. DEM data derived from hypsographic and hydrographic data digitizing, either photogrammetrically or from existing maps, are entered into the level 2 category after review on a DEM Editing System. An RMSE of one-half contour interval is the maximum permitted. There are no errors greater than one contour interval in magnitude. The DEM record C contains the accuracy statistics acquired during quality control." For more information on the filtering process for 7.5-minute DEMs see: <http://edcnts12.cr.usgs.gov/ned/filter/index.html>

These figures do not include any additional error that may have been introduced in the course of data format conversions and re-projection.

Additional information on DEM specifications can be found in the USGS National Mapping Program's Standards for Digital Elevation Model (DEMs): <http://www-nmd.usgs.gov/www/html/2nmpgds.html>, and in the USGS publication titled 'Digital Elevation Models - Data Users Guide 5': <ftp://mapping.usgs.gov/pub/ti/DEM/demguide>.

Lineage:

Source_Information:

Source_Citation:
Citation_Information:
Originator: United States Geological Survey
Publication_Date: Unknown
Title:
7.5-minute Digital Elevation Model (30- x 30-m data spacing, cast on Universal Transverse Mercator (UTM) projection)
Edition: None indicated
Geospatial_Data_Presentation_Form: Model
Publication_Information:
Publication_Place: Reston, VA
Publisher: United States Geological Survey
Other_Citation_Details:
According to the USGS DEM reference document, "the 7.5-minute DEM data are produced in 7.5- x 7.5-minute blocks either from map contour overlays that have been digitized, or from automated or manual scanning of National Aerial Photography Program (NAPP) quarter quad-centered photographs or from the National High-Altitude Photography Program (NHAP) quad- centered photographs. The NHAP program was formally discontinued in 1988, however limited production using this scale source is permitted. The data are processed to produce a DEM having a 30-m sampling interval."

Additional information on DEM specifications can be found in the USGS National Mapping Program's Standards for Digital Elevation Model (DEMs): <http://mapping.usgs.gov/standards>, and in them USGS publication titled 'Digital Elevation Models - Data Users Guide 5.': <ftp://mapping.usgs.gov/pub/ti/DEM/demguide>.
Source_Scale_Denominator: 24000
Type_of_Source_Media: Cartographic and photographic sources
Source_Time_Period_of_Content:
Time_Period_Information:
Single_Date/Time:
Calendar_Date: unknown
Source_Currentness_Reference: None
Source_Citation_Abbreviation: USGS
Source_Contribution: Includes land surface elevation information.
Process_Step:
Process_Description:
The DNR Geographic Services Section received the initial data in ArcInfo

Grid format, projected to UTM zones (NAD27 or NAD83). DNR staff reprojected the data to WTM83/91 and combined them into a statewide grid.

Process_Date: 1990

Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Wisconsin DNR, Enterprise Data Management Section

Contact_Position: GIS Data Specialist

Contact_Voice_Telephone: 608/264-8916

Contact_Facsimile_Telephone: 608/266-0870

Contact_Electronic_Mail_Address: John.Laedlein@dnr.state.wi.us

Hours_of_Service: normal business hours or as available

Process_Step:

Process_Description:

A mix of Level 2 and Level 1 DEMs were obtained from the USGS over a number of years as 1:24K quad or quarter-quad tiles. Filtered Level 1 30-meter DEM tiles obtained from the USGS in January of 2000 were the result of processing that the USGS carried out to improve display characteristics. Additional information about this filtering is believed to be available on the USGS DEM website. The resulting DEM is a "composite" 30-meter DEM including Level 2 coverage where it exists, and Level 1 elsewhere.

Process_Date: 1998-2000

Process_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Wisconsin DNR

Contact_Position: GIS Data Specialist

Contact_Address:

Address_Type: mailing address

Address: P.O. Box 7921

City: Madison

State_or_Province: WI

Postal_Code: 53707-7921

Country: USA

Contact_Voice_Telephone: 608/264-8916

Contact_Facsimile_Telephone: 608/266-0870

Contact_Electronic_Mail_Address: John.Laedlein@dnr.state.wi.us

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Spatial_Data_Organization_Information:
Indirect_Spatial_Reference: None
Direct_Spatial_Reference_Method: Raster
Raster_Object_Information:
Raster_Object_Type: Grid Cell
Row_Count: 17310
Column_Count: 16282
Vertical_Count: 1

Spatial_Reference_Information:
Horizontal_Coordinate_System_Definition:
Planar:
Map_Projection:
Map_Projection_Name: Transverse Mercator
Transverse_Mercator:
Scale_Factor_at_Central_Meridian: 0.999600
Longitude_of_Central_Meridian: -90.000000
Latitude_of_Projection_Origin: 0.000000
False_Easting: 520000.000000
False_Northing: -4480000.000000
Planar_Coordinate_Information:
Planar_Coordinate_Encoding_Method: row and column
Coordinate_Representation:
Abscissa_Resolution: 30.000000
Ordinate_Resolution: 30.000000
Planar_Distance_Units: meters
Geodetic_Model:
Horizontal_Datum_Name: D_North_American_1983_HARN
Ellipsoid_Name: Geodetic Reference System 80
Semi-major_Axis: 6378137.000000
Denominator_of_Flattening_Ratio: 298.257222

Entity_and_Attribute_Information:
Detailed_Description:
Entity_Type:
Entity_Type_Label: demgw930
Attribute:
Attribute_Label: ObjectID
Attribute_Definition: Internal feature number.

Attribute_Definition_Source: ESRI
Attribute_Domain_Values:
Unrepresentable_Domain:
Sequential unique whole numbers that are automatically generated.
Attribute:
Attribute_Label: Value
Attribute:
Attribute_Label: Count
Overview_Description:
Entity_and_Attribute_Overview:
No entities are represented; elevation is the only attribute information included in the DEM. Elevations are expressed in meters relative to the National Geodetic Vertical Datum of 1929 (NGVD29).
Entity_and_Attribute_Detail_Citation:
For more information, refer to the USGS 'Digital Elevation Model Data' User's Guide: <http://edcwww.cr.usgs.gov/glis/hyper/guide/usgs_dem>

Distribution_Information:
Distributor:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Wisconsin DNR, Enterprise Data Management Section
Contact_Position: GIS Data Specialist
Contact_Address:
Address_Type: mailing address
Address:
Mailcode: ET/8 101 South Webster Street P.O. Box 7921
City: Madison
State_or_Province: Wisconsin (WI)
Postal_Code: 53707-7921
Country: United States of America (USA)
Contact_Voice_Telephone: (608) 264-8916
Contact_Facsimile_Telephone: (608) 266-0870
Contact_Electronic_Mail_Address: John.Laedlelin@dnr.state.wi.us
Hours_of_Service: normal business hours or as available
Resource_Description: Downloadable Data
Distribution_Liability:
Refer to <http://www.dnr.state.wi.us/org/legal/WebSiteLegalInformation.html>
Standard_Order_Process:
Digital_Form:

Digital_Transfer_Information:
Format_Name: ARC/INFO Grid format
Format_Version_Number: ARC7
File_Decompression_Technique: WINZIP
Transfer_Size: 139.760
Digital_Transfer_Option:
Online_Option:
Computer_Contact_Information:
Network_Address:
Network_Resource_Name:
<ftp://gomapout.dnr.state.wi.us/geodata/elevation/DEM_30-meter/dem_30m.zip>
Access_Instructions: Download from DNR ftp site.
Offline_Option:
Offline_Media: CD-ROM
Recording_Capacity:
Recording_Density: 650
Recording_Density_Units: megabytes
Recording_Format: ISO 9660
Compatibility_Information:
SO 9660 format allows the CDROM to be read by most computer operating systems.

Metadata_Reference_Information:
Metadata_Date: 20050214, 20050516
Metadata_Review_Date: 20040308, 20050516
Metadata_Contact:
Contact_Information:
Contact_Organization_Primary:
Contact_Organization: Wisconsin DNR, Bureau of Technology Services
Contact_Position: GIS Data Specialist
Contact_Address:
Address_Type: mailing address
Address: P.O. Box 7921
City: Madison
State_or_Province: WI
Postal_Code: 53707-7921
Country: USA
Contact_Voice_Telephone: (608) 264-8916
Contact_Facsimile_Telephone: (608) 266-0870
Contact_Electronic_Mail_Address: John.Laedlein@dnr.state.wi.us

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Time_Convention: local time
Metadata_Extensions:
Online_Linkage: <http://www.esri.com/metadata/esriprof80.html>
Profile_Name: ESRI Metadata Profile

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